IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A circuit for compensating for nonlinear distortion in an electronic signal, the circuit comprising:

a signal input terminal and a signal output terminal, connected by selected first and second impedances, arranged in series and having a common impedance terminal;

a sub-circuit including at least first and second diodes, connected in an anti-series configuration, where a first terminal of the first diode is connected to a selected third impedance that is connected to the common terminal, and a first terminal of the second diode is grounded; and

a sub-circuit including third and fourth diodes, connected in said anti-series configuration, where a first terminal of the third diode is connected to a selected fourth impedance that is connected to said common terminal, and a first terminal of the fourth diode is grounded.

Claim 2 (Cancelled).

Claim 3 (Original): The circuit of claim 1, further comprising a third diode, having a first terminal connected to a selected fourth impedance that is connected to said common terminal, and having a second terminal that is grounded.

Claim 4 (Original): The circuit of claim 3, wherein each of said first diode, said second diode and said third diode has a bias current value that is selected so that said first, second and third diodes together provide a voltage response that includes a first signal component that is second order in an electrical current variable in said circuit and includes a

second signal component that is third order in the electrical current variable in said circuit, and the first and second signal components have selected signal coefficients.

Claim 5 (Original): The circuit of claim 1, wherein each of said first diode and said second diode has a bias current value that is selected so that said first and second diodes together provide a voltage response that includes a signal component that is third order in an electrical current variable in said circuit and the third order component has a selected signal coefficient.

Claim 6 (Currently Amended): A circuit for compensating for nonlinear distortion in an electronic signal, the circuit comprising:

a signal input terminal and a signal output terminal, connected by selected first and second impedances, arranged in series and having a common impedance terminal; and

a sub-circuit including at least first and second diodes, connected in an anti-parallel configuration, where an anode of the first diode and a cathode of the second diode are connected to a selected third impedance that is connected to the common terminal, and a cathode of the first diode and an anode of the second diode are grounded; and

a sub-circuit including third and fourth diodes, connected in said anti-series configuration, where a first terminal of the third diode is connected to a selected fourth impedance that is connected to said common terminal, and a first terminal of the fourth diode is grounded.

Claim 7 (Original): The circuit of claim 6, further comprising third and fourth diodes, connected in said anti-parallel configuration, where an anode of the third diode and a cathode of the fourth diode are connected to a selected fourth impedance that is connected

to said common terminal, and a cathode of the third diode and an anode of the fourth diode are grounded.

Claim 8 (Original): The circuit of claim 6, further comprising a third diode with a first terminal connected to a selected fourth impedance that is connected to said common terminal, and with a second terminal connected to ground.

Claim 9 (Original): The circuit of claim 8, wherein each of said first diode, said second diode and said third diode has a bias current value, and the bias current values are selected so that said first, second and third diodes together provide a voltage response that includes a signal component that is second order in an electrical current variable in said circuit and the second order component has a selected signal coefficient.

Claim 10 (Original): The circuit of claim 6, wherein each of said first diode and said second diode has a bias current value that is selected so that said first and second diodes together provide a voltage response that includes a signal component that is third order in an electrical current variable in said circuit and the third order component has a selected signal coefficient.

Claim 11 (Currently Amended): A circuit for compensating for nonlinear distortion in an electronic signal, the circuit comprising:

a signal input terminal and a signal output terminal, connected by selected first and second impedances, arranged in series and having a common impedance terminal;

a sub-circuit including at least first and second diodes, connected in an anti-series configuration, and third and fourth diodes, connected in an anti-series configuration, where

a first terminal of the first diode is connected to a selected third impedance that is connected to the common terminal, a first terminal of the second diode is connected to a first terminal of the third diode, and a first terminal of the fourth diode is grounded; and

a sub-circuit including third and fourth diodes, connected in said anti-series configuration, where a first terminal of the third diode is connected to a selected fourth impedance that is connected to said common terminal, and a first terminal of the fourth diode is grounded.

Claim 12 (Original): The circuit of claim 11, further comprising a fifth diode, having a first terminal connected to a selected fourth impedance that is connected to said common terminal, and having a second terminal that is grounded.

Claim 13 (Original): The circuit of claim 11, wherein each of said first diode, said second diode, said third diode and said fourth diode has a bias current value that is selected so that said first, second third and fourth diodes together provide a voltage response that includes a signal component that is third order in an electrical current variable in said circuit and the third order component has a selected signal coefficient.

Claim 14 (Currently Amended): A method for compensating for nonlinear distortion in an electronic signal, the method comprising:

determining at least one nonlinear term in a current signal I, represented as $c_k \cdot I^k$, where k is an integer at least equal to 2, that is present in a circuit voltage when the current signal I is processed by a selected signal processing circuit;

processing the current signal I through a selected compensation circuit to generate at least one nonlinear term, $a_p \cdot I^p$, in the current, where p is a selected integer equal to k, where the compensation circuit comprises:

a signal input terminal and a signal output terminal, connected by selected first and second impedances, arranged in series and having a common impedance terminal; ~~and~~

a sub-circuit including at least first and second diodes, connected in an anti-series configuration, where a first terminal of the first diode is connected to a selected third impedance that is connected to the common terminal, and a first terminal of the second diode is grounded; and

a sub-circuit including third and fourth diodes, connected in said anti-series configuration, where a first terminal of the third diode is connected to a selected fourth impedance that is connected to said common terminal, and a first terminal of the fourth diode is grounded,

where at least one parameter value for the first and second diodes is chosen so that the at least one nonlinear term generated by the compensation circuit, when added to the current signal I and processed through the processing circuit, cancels the nonlinear term, $c_k \cdot I^k$, in the circuit voltage that would otherwise result from processing the current signal I.

Claim 15 (Cancelled).

Claim 16 (Original): The method of claim 14, further comprising providing a third diode, having first terminal connected to a selected fourth impedance that is connected to said common terminal, and having a second terminal that is grounded.

Claim 17 (Currently Amended): A method for compensating for nonlinear distortion in an electronic signal, the method comprising:

determining at least one nonlinear term in a current signal 1, represented as $c_k \cdot I^k$, where k is an integer at least equal to 2, that is present in a circuit voltage when the current signal I is processed by a selected signal processing circuit;

processing the current signal I through a selected compensation circuit to generate at least one nonlinear term, $a_p \cdot I^p$ here p is a selected integer equal to k, in the current, where the compensation circuit comprises:

a signal input terminal and a signal output terminal, connected by

selected first and second impedances, arranged in series and having a common impedance terminal; ~~and~~

a sub-circuit including at least first and second diodes, connected in an anti-parallel configuration, where an anode of the first diode is connected to a selected third impedance that is connected to the common terminal, and a cathode of the second diode is grounded; and

a sub-circuit including third and fourth diodes, connected in said anti-series configuration, where a first terminal of the third diode is connected to a selected fourth impedance that is connected to said common terminal, and a first terminal of the fourth diode is grounded,

where at least one parameter value for the first and second diodes is chosen so that the at least one nonlinear term generated by the compensation circuit, when added to the current signal I and processed through the processing circuit, cancels the nonlinear term, $c_k \cdot I^k$, in the circuit voltage that would otherwise result from processing the current signal I.

Claim 18 (Original): The method of claim 17, further comprising providing third and fourth diodes, connected in said anti-parallel configuration, where an anode of the third diode is connected to a selected fourth impedance that is connected to said common terminal, and a cathode of the fourth diode is grounded.

Claim 19 (Original): The method of claim 17, further comprising a third diode with a first terminal connected to a selected fourth impedance that is connected to said common terminal, and with a second terminal connected to ground.